PDA
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ABSTRACT: PURPOSE: The accuracy, comprehensiveness, and ease of use of drug interaction software used with personal digital assistants (PDAs) were studied. METHODS: Each program was assessed for accuracy using 40 clinically important and 40 clinically unimportant drug interaction pairs. Accuracy was scored through the summation of software sensitivity, specificity, and positive and negative predictive values. The comprehensiveness of each program was determined by the number of components in the drug interaction monograph. Time needed to identify the management of five important drug interactions defined each program's ease of use. The aggregate scores for accuracy, comprehensiveness, and ease of use were calculated. RESULTS: Scoring 777 and 756 out of a possible 800 points, iFacts and Lexi-Interact, respectively, provided the most competent, complete, use-friendly compendia for assessment of drug interactions. Mosby's Drug Consult and Mobile Micromedex ranked third and fourth, scoring 688 and 655 points, respectively, while ePocrates Rx v. 6.0 rated seventh, with a score of 559. All drug interaction resources suffer from limitations in the quality or relevance of evidence for the interaction, an absence of identifiable patient and medication risk factors, and a lack of standardization in assigning significance to the interaction. Consequently, clinicians must interpret the importance of the interaction based on all available evidence. Discussion of such evidence was available for only iFacts and Lexi-Interact. CONCLUSION: Both iFacts and Lexi-Interact excelled as PDA pharmacopoeia for assessing drug interactions. However, clinicians should understand the limitations of all current drug interaction resources and exercise vigilance in prevention and recognition of interactions relevant to their patients.

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ABSTRACT: Handheld personal digital assistants (PDA) are increasingly being used by physicians for a variety of information and data management purposes. We evaluated a PDA-based data management system for our acute pain service. A structured questionnaire survey was conducted to assess staff experience and attitude towards the paper system before the introduction of the PDA, and three months after introduction of the PDA system. We compared the time taken to conduct the acute pain round before and after the implementation of the PDA. The time saved in data management and the amount of paper saved were estimated. Data from 177 patients with a total of 635 acute pain follow-up visits were entered over a three-month period. User satisfaction, ease of access to drug reference and clinical guidelines were similar between the two systems. The respondents found that the PDA was easy to use but less so than the paper system (P = 0.007), in particular, when accessing a patient's cumulative data (P = 0.007). There was no missed follow-up or data entry with the use of PDA. The time taken to attend follow-up visits was similar for the two systems (Paper: 8.8 +/- 3.2 compared to PDA: 7.0 +/- 2.0 minutes, P = 0.151). The estimated annual amount of paper and time saved in data management was 650 sheets and 130 man-hours respectively. Our experience with the use of the PDA in APS was satisfactory. The PDA system can potentially reduce time and paper use and missed data entry and patient follow-up.

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ABSTRACT: This article focuses how clinical staff can use personal digital assistants (PDAs) to become more organized, expand quick reference libraries, and have some fun! If you've been wondering if a PDA will help maximize your work efficiently, this article is for you!

Wilcox RA, Whitham EM. Reduction of medical error at the point-of-care using electronic clinical information delivery. Intern Med J 2003 Nov;33(11):537-40. [PMID:14656260].

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ABSTRACT: There is accumulating evidence that point-of-care delivery of clinical information such as evidence-based medicine, practice guidelines and drug information can streamline clinical practice and reduce preventable errors. In Australia, hospital-based physicians have -generally been slow to fully use these resources to enhance their clinical practice. Here we provide an introduction to the practical application of several hand-held and electronic information systems available to Australian physicians.

Stengel D, Bauwens K, Walter M, Kopfer T, Ekkernkamp A. Comparison of handheld computer-assisted and conventional paper chart documentation of medical records. A randomized, controlled trial. J Bone Joint Surg Am 2004 Mar;86-A(3):553-60. [PMID:14996882].

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ABSTRACT: BACKGROUND: Daily documentation and maintenance of medical record quality is a crucial issue in orthopaedic surgery. The purpose of the present study was to determine whether the introduction of a handheld computer could improve both the quantitative and qualitative aspects of medical records. METHODS: A series of consecutive patients who were admitted for the first time to a thirty-six-bed orthopaedic ward of an academic teaching hospital for a planned operation or any other treatment of an acute injury or chronic condition were randomized to daily documentation of their clinical charts on a handheld computer or on conventional paper forms. The electronic documentation consisted of a specially designed software package on a handheld computer for bedside use with structured decision trees for examination, obtaining a history, and coding. In the control arm, chart notes were compiled on standard paper forms and were subsequently entered into the hospital's information system. The number of documented ICD (International Classification of Diseases) diagnoses was the primary end point for sample size calculations. All patient charts were reread by an expert panel consisting of two surgeons and the surgical quality assurance manager. These experts assigned quality ratings to the different documentation systems by scrutinizing the extent and accuracy of the patient histories and the physical findings as assessed by daily chart notes. RESULTS: Eighty patients were randomized to one of the two documentation arms, and seventy-eight (forty-seven men and thirty-one women) of them were eligible for final analysis. Documentation with the handheld computer increased the median number of diagnoses per patients from four to nine ($p < 0.0001$), but it produced some overcoding for false or redundant items. Documentation quality ratings improved significantly with the introduction of the handheld device ($p < 0.01$) with respect to the correct assessment of a patient's progress and translation into ICD diagnoses. Various learning curve effects were observed with different operators. Study physicians assigned slightly better practicability ratings to the handheld device. CONCLUSIONS: The preliminary data from this study suggest that handheld computers may improve the quality of hospital charts in orthopaedic surgery. Level of Evidence: Therapeutic study, Level I-1a (randomized controlled trial [significant difference]). See Instructions to Authors for a complete description of levels of evidence.

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Carroll AE, Tarczy-Hornoch P, O'Reilly E, Christakis DA. The effect of point-of-care personal digital assistant use on resident documentation discrepancies. Pediatrics 2004 Mar;113(3 Pt 1):450-4. [PMID:14993533].

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ABSTRACT: BACKGROUND: We recently found documentation discrepancies in 60% of resident daily-progress notes with respect to patient weight, medications, or vascular lines. To what extent information systems can decrease such discrepancies is unknown. OBJECTIVE: To determine whether a point-of-care personal digital assistant (PDA)-based patient record and charting system could reduce the number of resident progress-note documentation discrepancies in a neonatal intensive care

unit (NICU). DESIGN/METHODS: We conducted a before-and-after trial in an academic NICU. Our intervention was a PDA-based patient record and charting system used by all NICU resident physicians over the study period. We analyzed all resident daily-progress notes from 40 randomly selected days over 4 months in both the baseline and intervention periods. Using predefined reference standards, we determined the accuracy of recorded information for patient weights, medications, and vascular lines. Logistic and Poisson regression were used in analyses to control for potential confounding factors. RESULTS: A total of 339 progress notes in the baseline period and 432 progress notes in the intervention period were reviewed. When controlling for covariates in the regression, there were significantly fewer documentation discrepancies of patient weights in notes written by using the PDA system (14.4%-4.4% of notes; odds ratio [OR]: 0.29; 95% confidence interval [CI]: 0.15-0.56). When using the PDA system, there were no significant changes in the numbers of notes with documentation discrepancies of medications (27.7%-17.1% of notes; OR: 0.63; 95% CI: 0.35-1.13) or vascular lines (33.6%-36.1% of notes; OR: 1.11; 95% CI: 0.66-1.87). CONCLUSIONS: The use of our PDA-based point-of-care patient record and charting system showed a modest benefit in reducing the number of documentation discrepancies in resident daily-progress notes. Further study of PDAs in information systems is warranted before they are widely adopted.